

REMARKS

Claim 32 is now pending in the application. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

DRAWINGS

The drawings stand objected to under 37 CFR 1.83(a) for allegedly failing to show certain features recited in claims 21, 22, 23, 24, 26 and 27. This objection is respectfully traversed. Notwithstanding, claims 21, 22, 23, 24, 26 and 27 are cancelled. Accordingly, this objection is moot.

SPECIFICATION

The amendment filed January 29, 2007 stands objected to as introducing new matter into the disclosure. In particular, the Office Action asserts that deleting the phrase "which includes each of the two arrays of ejection nozzles 39 of the function liquid droplet head 31" from paragraph [0080] constitutes new matter. Although Applicant does not agree, Applicant elects to amend paragraph [0080] by reinserting the previously deleted phrase. However and solely for the purpose of clarity, Applicant replaces the term "includes" with "houses". The original term "includes" in paragraph [0080], i.e.,

"which includes each of the two arrays of ejection nozzles 39 of the function liquid droplet ejection head 31."

was not intended to convey a meaning similar to the term "comprises" and the like. Instead, the intended meaning was "houses therein, or contains therein, or embeds". This

is clear from the description of the series of operations of the maintenance work starting with paragraph [0075]. Namely, when the cap main body 81 is moved upward, the two arrays of ejection nozzles 39 of the function liquid droplet ejection head 31 will be housed (or embedded or contained) inside the concave part 83, thereby allowing for further operations such as a suction operation.

To clarify the above intention and to address the Examiner's concerns, Applicant reinserts the previously deleted phrase but changes the term "includes" to "houses". Applicant respectfully submits that any alleged contradiction in the specification is now eliminated and also that no new matter is added.

REJECTION UNDER 35 U.S.C. § 112

Claims 21-31 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. This rejection is respectfully traversed. Notwithstanding, claims 23-31 are cancelled. Accordingly, this rejection is moot.

REJECTION UNDER 35 U.S.C. § 102

Claim 21 stands rejected under 35 U.S.C. § 102(b) as being unpatentable over Reed (U.S. Pat. No. 5,797,546). This rejection is respectfully traversed. Notwithstanding, claim 21 is cancelled. Accordingly, this rejection is moot.

NEW CLAIM

New claim 32 is added. Support for this new claim can be found throughout the specification, claims and drawings as originally filed and in particular original claims 4 – 8. Claim 32 calls for an apparatus for sucking a function liquid droplet ejection head by bringing a cap into close contact with a nozzle surface of the function liquid droplet ejection head to thereby perform sucking of the function liquid droplet ejection head through the cap, the sucking being made for initial charging as well as for cleaning, the initial charging being performed for charging, with the function liquid, the function liquid ejection head constituted by an ink jet head which ejects the function liquid droplet, the cleaning being made for removing the function liquid thickened inside the function liquid droplet ejection head, the apparatus comprising: an ejector which sucks, in fluid-flow communication with the cap, the nozzle which is communicated with an inner passage of the function liquid droplet ejection head; working fluid supply means for supplying the ejector with a working fluid; pressure detection means for detecting a pressure in a suction pipeline connecting the cap to a suction port of the ejector; a flow rate regulating valve for regulating a flow rate of the working fluid supplied to the ejector, the valve being interposed in a working fluid supply pipeline connecting the working fluid supply means to a supply port of the ejector; a suction pipeline gate valve which is interposed in the suction pipeline and which opens/closes the suction pipeline; and first control means for controlling the flow rate regulating valve based on a detection result obtained by the pressure detection means and for controlling the suction pipeline gate valve, wherein the first control means closes the flow rate regulating valve and the suction

pipeline gate valve when the suction of the function liquid droplet ejection head is finished.

Thus, the sucking is performed for “initial charging” and “cleaning”. The claimed suction pipeline gate valve is interposed in the suction pipeline and opens/closes the suction pipeline. The first control means controls the flow rate regulating valve based on a detection result obtained by the pressure detection means and controls the suction pipeline gate valve. For example, the first control means closes the flow rate regulating valve and the suction pipeline gate valve when the suction of the function liquid droplet ejection head is finished.

As stated in paragraph [0023] of Applicant’s specification, according to this arrangement, the flow rate regulating valve is closed when the suction for the function liquid droplet ejection head is finished. Thus, no working fluid is supplied to the ejector, and thereby the suction operation can be stopped. By closing the suction pipeline gate valve together with the flow rate regulating valve, the suction for the function liquid droplet ejection head can be surely stopped. As such, the suction of the function liquid from the function liquid droplet ejection head is not wastefully continued.

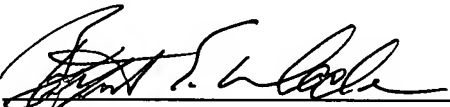
As can be appreciated from the foregoing, the novel arrangement of the apparatus of claim 32 prevents the waste of very expensive function liquid. This is quite remarkable as evidence by the fact that the prior art fails to teach or suggest an apparatus which performs both the initial charging and the cleaning to attain the above advantages.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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